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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,207	01/28/2002	Lars-Peter Heineck	P02,0022	4793

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EXAMINER

LATTIN, CHRISTOPHER W

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 11/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/048,207	<b>Applicant(s)</b> HEINECK ET AL.	
	<b>Examiner</b> Christopher W Lattin	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 9/6/2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Inaba et al. (U.S. Patent 6,153,476).

Inaba et al. teach a method for producing an integrated semiconductor component comprising the steps of preparing a semiconductor substrate having at least one first region 11b and at least one second region 11a, producing gate paths in the first region (21B) and the second region (21A) of the semiconductor substrate 11, producing source/drain regions 25B neighboring the gate paths 21B in the first region of the semiconductor substrate; forming spacers 22A on gate paths in the first region; producing source/drain regions 24A neighboring the gate paths in the second region 11a of the semiconductor substrate 11; forming sacrificial contacts 71 in the second region 11a; then forming additional spacers 22b in the first region 11b; removing a portion of the sacrificial contacts 71 to expose source/drain regions 24A in the second region 11a and preparing contacts 33 to predetermined source/drain regions 24A in the second region 11a and the first region 11b. See Figures 5A-5C.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba et al. (U.S. Patent 6,153,476) in view of Naito et al. (U.S. Patent 5,856,219, cited by applicant).

Inaba et al. teach all the limitations of claim 11 including providing a protective layer 26 selected from a group consisting of silicon nitride, silicon oxide and oxynitride layers on the gate material layer 21 and then structuring the gate material layer 21 and protective layer 26 to form the gate path, but fail to teach that the gate is comprised of polysilicon. Naito et al. teach forming a gate path of polysilicon. It would have been obvious to one skilled in the art at the time of the invention to utilize polysilicon as taught by Naito et al. as the "gate electrode materials" referenced in column 7 of Inaba et al. in order to form a gate with low resistance.

Claims 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba et al. (U.S. Patent 6,153,476) in view of Naito et al. (U.S. Patent 5,856,219) as applied to claim 11 above and further in view of Moslehi (U.S. Patent 5,322,809).

Inaba et al. in view of Naito et al. are applied supra and teach all of the limitations of claims 12 and 13, but fail to specifically teach that the protective layer is formed with a thickness so that the protective layer exhibits a thickness of less than 100nm after the structuring step or that after the step of forming sacrificial contacts and prior to the step of preparing contacts to the predetermined source/drain regions, removing the protective layer from the gate, paths, at least in the first region, and then doping the gate paths in the first region with a dopant having different conductive types and forming silicides on the gate paths. Moslehi teaches the formation of a protective layer 24 of 20-100 nm and removing the layer to later form a silicide on the doped gate paths of  $\text{CoSi}_2$ ,  $\text{TaSi}_2$ ,  $\text{TiSi}_2$  and  $\text{WSi}_x$ . It would have been obvious to one skilled in the art at the time of the invention to use a protective layer of 20-100 nm to protect the gate with a minimal amount of material, thus saving time and money. It further would have been obvious to dope the gate and replace the protective layer of Inaba et al. with a silicide layer taught by Moslehi in order to reduce the contact resistance of the gate.

### ***Response to Arguments***

Applicant's arguments filed 9/8/2003 have been fully considered but they are not persuasive. Referencing Figure 4 of Inaba et al., applicant argues that the reference fails to teach the method of forming sacrificial contacts as now claimed. In view of applicant's amendment the rejection has been modified, with reference made to Figures 5 A-C, to show that the Inaba et al. patent continues to anticipate claim 9 and obviate dependant claims as indicated above.

***Drawings***

Drawing corrections were received on 1/28/2002 and are approved by the examiner.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Lattin whose telephone number is (703) 305-3017. The examiner can normally be reached Monday through Friday from 8:00 A.M. to 5:00 P.M.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached at (703) 308-3325. The fax numbers for this

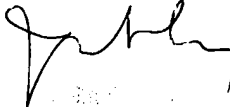
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Group are (703) 872-9318 for responses to non-final actions and (703) 872-9319 responses to final actions.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

CWL   
November 18, 2003

  
November 18, 2003